THE FORERUNNER

User Manual

WYBRON INCORPORATED

ADVANCING THE ART OF LIGHTING

4-inch Color Changer
7-inch Color Changer
Forerunner Power Supply
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SAVE THESE INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

This manual gives step-by-step instructions for the preparation, setup, and operation of the Forerunner Color Changer.

There is a potential risk of fire, electric shock or injury to persons if the product is not used as instructed.

The Coloram II Power Supply is to be used in an indoor environment only and is not intended for residential use.

The Forerunner Color Changers are not intended for residential use.

Introduction

The Forerunner system is a scrolling color changer, available in 4-inch and 7-inch models, and a power supply offering ease of setup and use. Its 16-color capacity and DMX compatibility affords the designer economy and versatility, particularly when budget and space are limited. The lightweight color changers slide easily into the gel frame holder of the light fixture and the compact, 16-color changer Forerunner Power Supply attaches easily to the truss of the lighting rig.

This manual gives step-by-step instructions for preparation, setup and operation of the Forerunner Color Changer and Power Supply.

The Forerunner System

The Forerunner System consists of one or more color changers and a remote power supply which can power up to 16 color changers. The DMX512 control signal from the lighting board is connected to the power supply and can continue onto more Forerunner Power Supplies or other DMX-controlled devices. The power supply sends both power and control signal on a single cable eliminating the need for a separate power cable for each color changer.

Caution: The Forerunner System is not compatible with the Coloram II System. Do not connect Coloram II Color Changers to Forerunner Power Supplies, or Forerunner Color Changers to Coloram II Power Supplies. Damage from such action will not be covered by the Forerunner or Coloram II warranties.

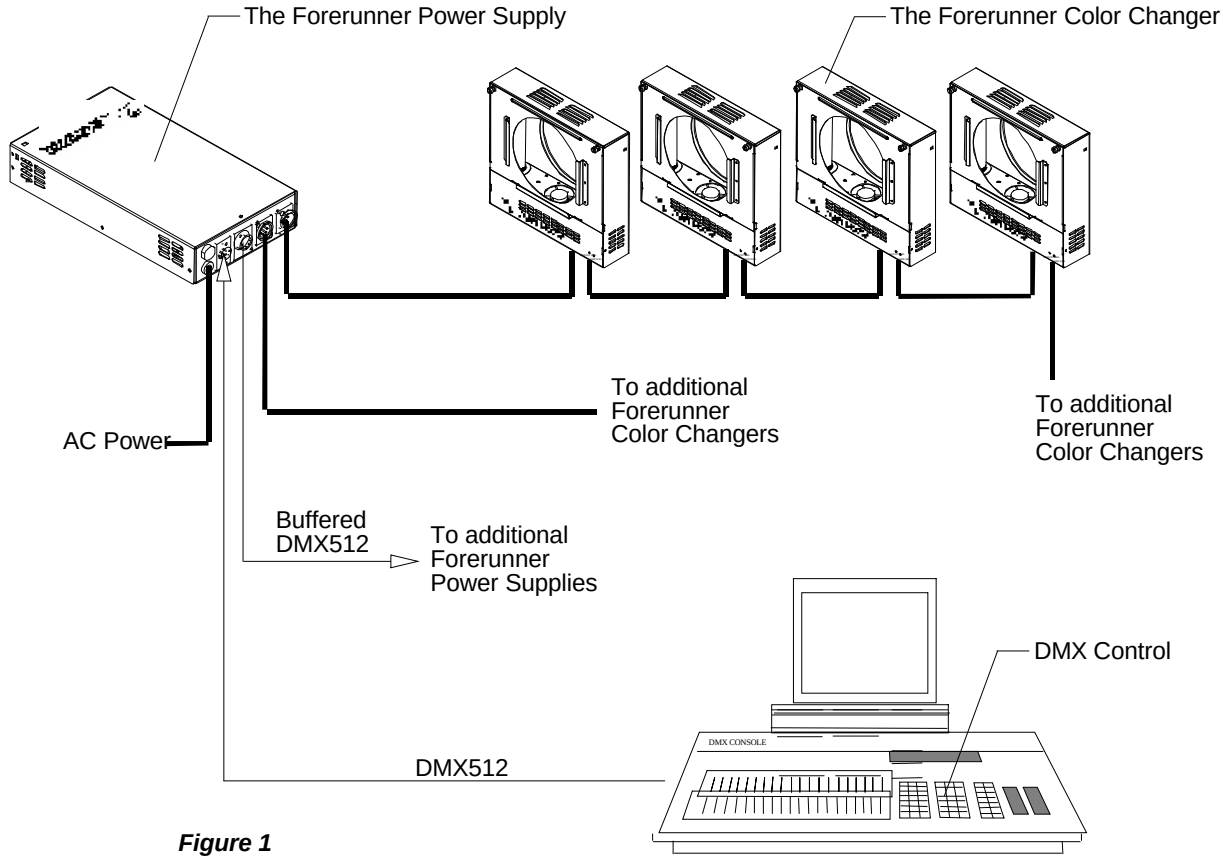


Figure 1

Using The Forerunner

The Forerunner Color Changer sets its frame position according to the DMX512 level it receives from the control console for the channel it is set to. The following chart shows the level settings that correspond with each frame position. The color of each frame position will be determined by your custom gelstring specification.

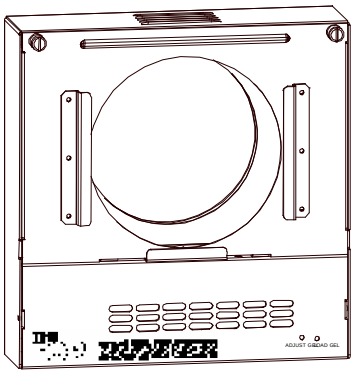
Channel Level	Frame Position
00	Frame 1
07	Frame 2
14	Frame 3
21	Frame 4
28	Frame 5
34	Frame 6
42	Frame 7
48	Frame 8
55	Frame 9
61	Frame 10
68	Frame 11
75	Frame 12
80	Frame 13
88	Frame 14
94	Frame 15
FL	Frame 16

If you send a channel level that is between the values shown, you can create split frame effects. For example, if you send a level of 51, the color changer positions the gelstring halfway between frame 8 and frame 9 creating a blend of the two colors.

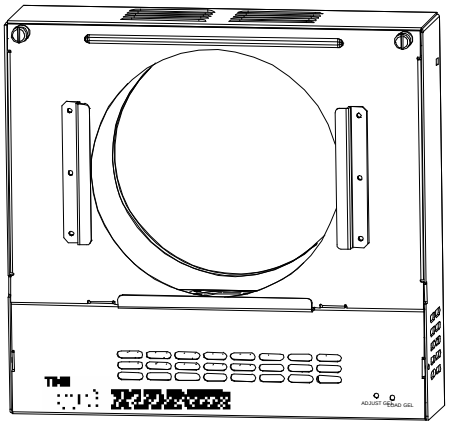
The Forerunner Components

Color Changer

The Forerunner Color Changer works with a 16-frame gelstring. The position of the gelstring is controlled by DMX signal distributed from the power supply. The color changer is powered by 24 volts DC from the power supply. The control signal and DC power are both supplied in the one cable connecting the color changer to the power supply.



4-inch Forerunner



7-inch Forerunner

Figure 2

Gelstring

The gelstring is a series of 16 precisely-cut, colored gel frames joined together, side by side, to create a sequence of colors. Two additional gels at each end of the gelstring are called the leader and the trailer and are five inches wide to allow for proper attachment to the rollers.

If you need to replace a gelstring in your color changer, detailed steps for this procedure are on page 13.

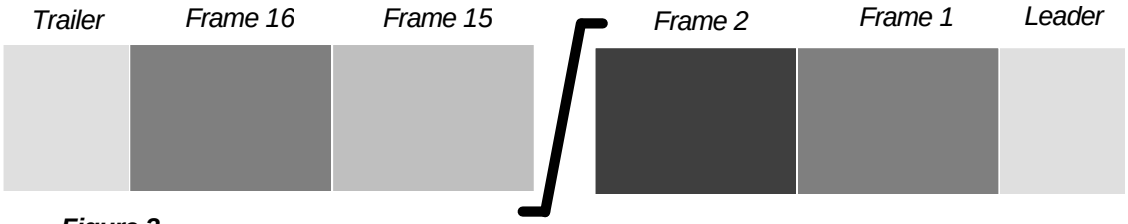


Figure 3

Power Supply

The power supply has two color changer outputs and provides each color changer with DMX signal and 24 volts DC. The power supply features a DMX bypass relay to pass the DMX signal to the DMX output connector in the event of AC power loss. The power supply automatically accommodates 85 - 132 VAC (50/60 Hz) or 170 - 264 VAC (50/60 Hz). AC power is indicated by a red LED which can be viewed from the stage.

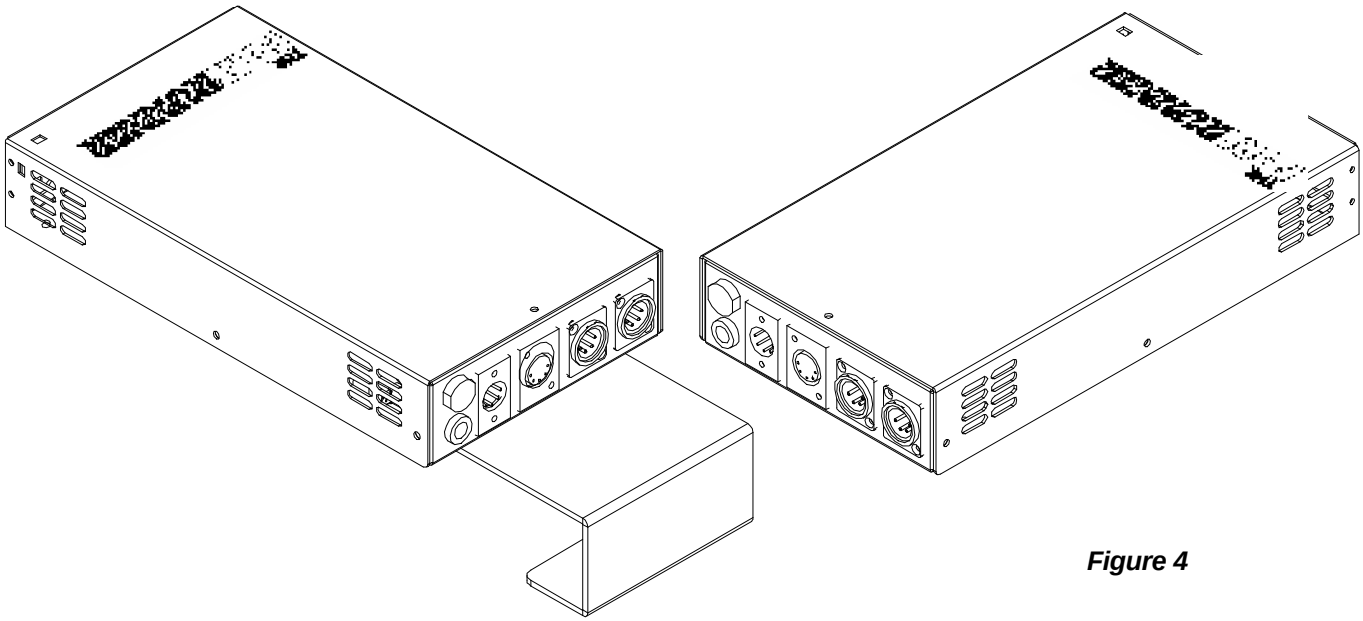


Figure 4

Cables

The Forerunner cable connects each of the two power supply outputs to a daisy chain of up to eight Forerunner Color Changers and provides the color changers with power and control signal. The Forerunner cable uses 4-pin XLR connectors on either end and consists of two -14 AWG conductors and a 22 AWG twisted, shielded pair.

Note: The cable used in the Forerunner System is the same cable which is used in the Coloram II System and may be referred to as either Coloram II cable or Forerunner cable.

Installing the Forerunner

To get your Forerunner System up and running, follow these hookup and checkout procedures.

1. Set the DMX512 color changer channels

Each color changer is assigned an individual DMX address to which it will respond from the lighting console. The addresses are set via the three rotary switches located on the back of each color changer. Valid DMX addresses are 001 - 512.

2. Attach the color changer to the lamp

Slide the color changer's mounting bracket into the gel frame holder of your lamp and lock the gel frame retention clip (if available).

If the mounting plate installed on your color changer doesn't fit the fixture, you may replace it with a differently sized plate. See page 11 for information on changing mounting plates.

The mounting plate allows you to position the color changer with the gelstring rolling either horizontally or vertically. However, Forerunner operates most effectively with the fan blowing air vertically (as hot air naturally rises).

3. Attach the safety cable

A safety cable is attached to the back, right hand side of the color changer. Run this cable around the pipe or truss from which you hang the light fixture and clip it to itself (fig. 5).

4. Attach the power supply to the truss

The Forerunner Power Supply is designed to attach directly to the pipe or truss of your lighting rig.

The power supply comes with a mounting bracket which hooks over the pipe or truss and is then locked into place with a thumb screw.

Once you have the power supply positioned and locked into place, connect the safety cable by running it around the pipe or truss to which the power supply is attached.

Note: For cabling purposes, it may be preferable to position your power supply toward the center of the pipe or truss and daisy chain either direction from it.

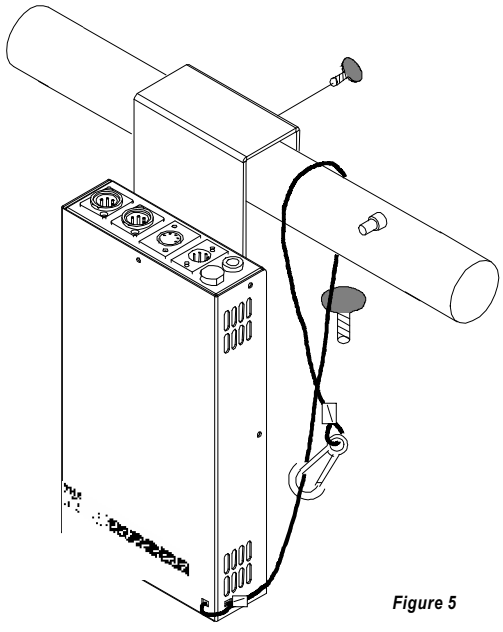


Figure 5

5. Connect the color changers to the power supply

Connect the color changers to the power supply using the supplied 4-pin power/signal cable. The connectors are on the back of the color changers and the front of the power supply.

Note: Both power and signal are supplied to the color changers on the same cable. The power supply has two color changer outputs. Each output will control up to eight color changers with a maximum of 350 feet of cable per output.

6. Connect the power supply to AC power

Plug the AC cord into a non-dimmed power circuit. The power supply automatically accommodates 85 - 132 VAC (50/60 Hz) or 170 - 264 VAC (50/60 Hz).

Power at the power supply is indicated by a red LED which can be viewed from the stage. Power is also indicated by a red LED on the bottom of each color changer. All connected color changers will position their gelstrings to frame 1.

Caution: Do not power the unit from a dimmer. Severe damage will result, and is not covered by product warranty.

7. Connect and set the DMX512 source

Connect the DMX512 signal source to the DMX input connector on the front of the power supply using standard DMX cable. Valid DMX signal will be indicated by a green LED on the bottom of each color changer. Also, the color changers will now position their gelstrings according to their respective DMX signal levels.

Mounting and installation accessories

The components of your Forerunner System may require the installation of additional mounting accessories or the replacement of others. Some of these accessories, such as the power supply hanger bracket and your choice of one color changer mounting plate, are supplied while other accessories, such as additional mounting plates, may need to be purchased separately. The following sections describe the procedures for installation and replacement of these accessories

Power supply hanger bracket

The Forerunner Power Supply is shipped with a hanger bracket to allow pipe or truss mounting. The hanger bracket will need to be installed prior to the Forerunner System installation.

Follow these steps to install the hanger bracket.

1. Disconnect AC power from the power supply.

2. Place the power supply upside down on a flat surface.

3. Position the bracket as shown below.

4. Attach the bracket using a 3/16" Allen wrench and the supplied screws.

Note: Use the supplied thumb screw to clamp the hanger bracket to the desired pipe or truss.

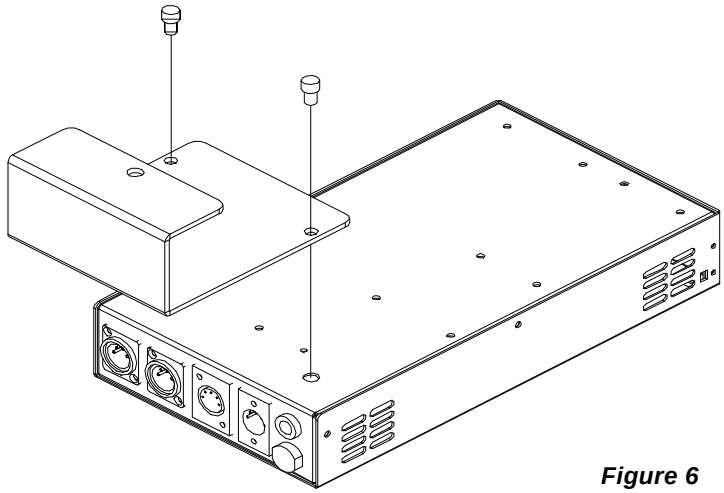


Figure 6

Color changer mounting plate

The Forerunner Color Changer ships with your choice of available mounting plates installed. It may be necessary, when mounting the color changer on different light fixtures, to replace the mounting plate.

Follow these instructions to replace the mounting plate.

1. Place the color changer on a flat surface, with The Forerunner logo face down.

2. Unscrew the four screws which hold the current mounting plate on.

3. Place the replacement mounting plate on the color changer, aligning the screw holes properly.

4. Fasten the four corners of the mounting plate to the color changer using the same screws you removed in step 2.

Note: Always use the supplied screws, as they are treated with an anti-vibration compound to keep them from loosening.

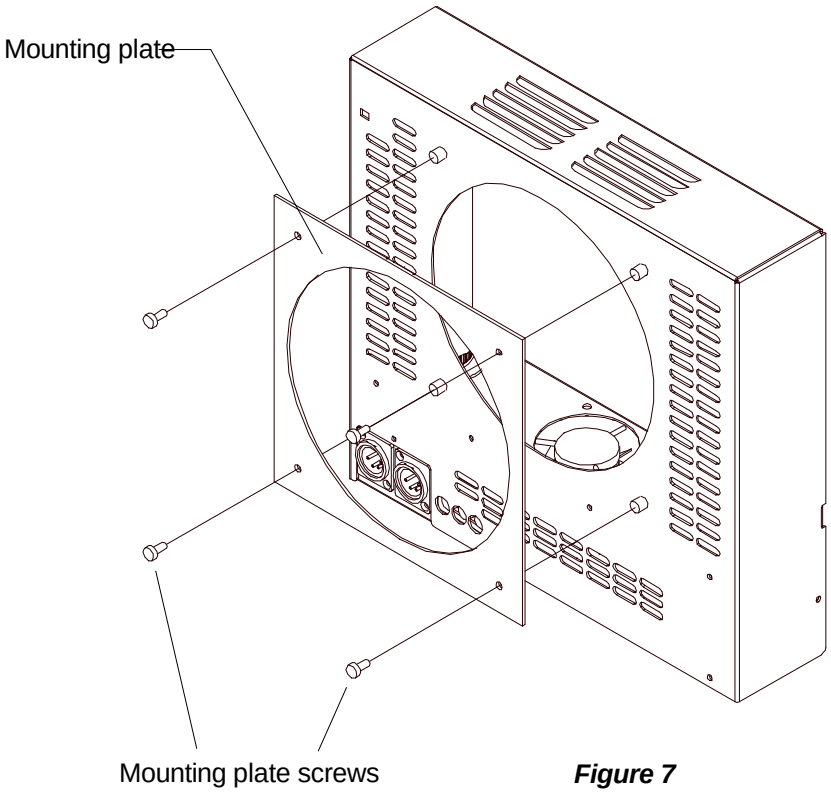


Figure 7

Replacing a gelstring

At some point in time you may find that you need to replace the gelstring in your color changer, either because the old one wears out, or because you want a different selection of colors. The Forerunner's Autoload™ feature makes this quick and easy.

Caution: Operating the Forerunner Color Changers with damaged gelstrings will damage the color changers. Replace the gelstrings before damage occurs.

Note: The gelstring must be 16 frames long for proper operation. If a frame is damaged, do not remove a frame and splice the gelstring. Replace the gelstring. Gelstrings may be ordered from Color Express by WYBRON INCORPORATED.

Caution: Do not force the rollers to turn when moving them by hand. If they do not turn easily, you have not disconnected the color changer from the power supply and should do so immediately.

Remove the old gelstring

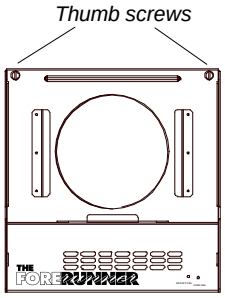


Figure 8

This procedure is performed with no power to the color changer.

1. Place the color changer on a flat surface with the Forerunner logo facing up.

2. Remove the front panel by unscrewing the two thumb screws at the top right and left corners of the front door as shown in the first picture on the left.

3. Gently roll the gelstring onto the left roller, exposing the clear leader taped on the right roller.

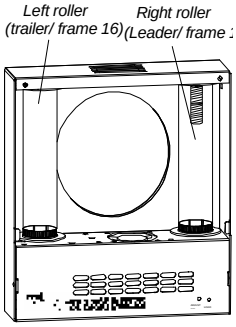


Figure 9

4. Untape the leader from the right roller. Remove the tape from the leader.

5. Roll the gelstring into a tube, slowly rolling it off of the left roller.

6. When you reach the clear trailer, untape it from the roller.

Hint: To save time, move all gelstrings to frame one via the DMX source before disconnecting power.

Install the new gelstring

Note: Use gaffer's tape to attach the gelstrings to the rollers. Do not use duct tape or masking tape.

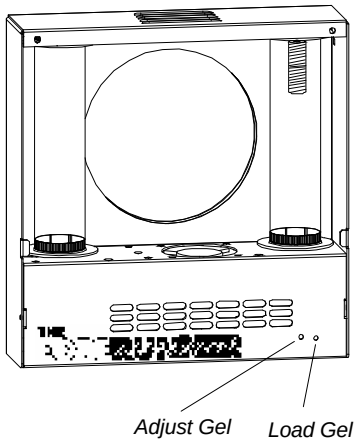


Figure 10

1. Apply power to the color changer.

2. Press the recessed "Load Gel" button located in the lower right hand corner of the color changer. The rollers will rotate to the trailer load position. The rapidly flashing "DMX" LED indicates the rollers are either moving toward the trailer load position or are at the trailer load position.

3. Put a strip of gaffer's tape on the edge of the gelstring trailer. Holding the trailer, let the rest of the roll hang off the right side of the color changer.

4. Center the edge of the trailer between the two ends of the left roller as shown to the left. Tape the trailer along the top of the roller as shown.

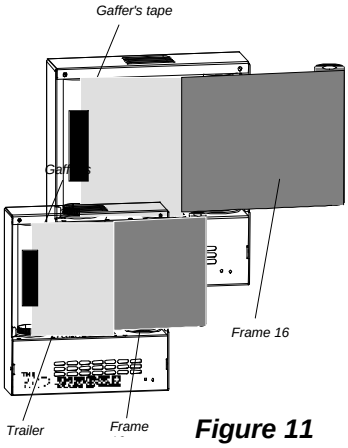


Figure 11

5. Hold the gelstring loosely in your right hand and press the "Load Gel" button again. The rollers will rotate to the leader load position. This will wind the gelstring onto the left roller. The "DMX" LED will flash slowly to indicate the rollers are either moving toward the leader load position or are at the leader load position.

6. Turn the "Adjust Gel" trim pot to bring the leader end of the gelstring to the top center of the right roller. Gel material of different thickness will cause variation in the leader end position. This is normal.

7. Put a strip of gaffer's tape on the gelstring leader.

8. While holding the end of the gelstring, turn the spring roller 3.5 turns toward the drive roller. The sticker at the bottom end of the roller has a black line on it to help you judge the number of turns

9. Tape the gelstring to the spring roller.

10. Press the "Load Gel" button once again. The gelstring will now move to the first frame if no DMX signal is present or to the commanded DMX level if it is.

11. Replace the front panel and tighten the thumb screws securely.

Note: As the gelstring becomes worn, you may find it necessary to adjust the position of frame 1. This is normal and is done by turning the "Adjust Gel" trim pot.

Specifications

Forerunner Color Changer

DMX termination: Not required
End to end speed: 5 seconds
Fan: Single speed - normal
Fuse: Solid state internal auto reset
Gelstring: 16 colors
Individual DMX address: 001 - 512
Fixture compatibility (with optional mounting plates):
- 4-inch Forerunner
  - --Source Four
  - --Shakespeare 600
  - --Other fixtures with 6.25" gel frames
- 7-inch Forerunner
  - --Source Four
  - --Shakespeare 600

--Other fixtures with 6.25" gel frames
--Source Four PAR
--PAR 64
--Full size ellipsoidals

LED Indicators: Power and DMX512 signal

Power supply compatibility:
--Forerunner Power Supply
--Rainbow Power Supply
--ChromaQ Power Supply

Weight: 4-inch - 3.44 lbs./1.56 kg
7-inch - 3.92 lbs./1.77 kg

Forerunner gelstring

4-inch Forerunner:
--16 frames plus leader and trailer
--Working length: 128"
--Overall length: 138"
--Frame width: 8"
--Frame height: 6 1/8"
--Leader: 5"
--Trailer: 5"

7-inch Forerunner:
--16 frames plus leader and trailer
--Working length: 160"
--Overall length: 170"
--Frame width: 10"
--Frame height: 7 1/16"
--Leader: 5"
--Trailer: 5"

Forerunner Power Supply

Capacity: 16 Forerunner Color Changers

Color Changer compatibility:
--Forerunner Color Changers
--Rainbow Color Changers
--ChromaQ Color Changers

Connectors:
--DMX in: Male 5-pin XLR
--DMX out: Female 5-pin XLR
--Color changer out x 2: Female 4-pin XLR

Power loss DMX bypass relay: Yes

DMX512 termination: Terminated and regenerated

Fuse: --2 amp slow blow at 115 VAC
--1 amp slow blow at 230 VAC

Input Power: Automatically accepts 85 - 132 VAC 50/60 Hz and 170 - 264 VAC 50/60Hz
Input Signal: 1990 USITT standard DMX512
LED indicator: Power

Forerunner cable

The Forerunner cable uses 4-pin XLR connectors on either end and consists of two -14 AWG conductors and a 22 AWG twisted, shielded pair.

XLR Pin #	Wire Color	Function	Size
1	White	Ground	14 AWG
2	Green	Data -	22 AWG
3	Red	Data +	22 AWG
4	Black	24 Volts DC	14 AWG

Note: The maximum amount of cable per color changer output on the power supply is 350 feet.

Note: Wybron uses the same cable for the Forerunner and Coloram II Systems, therefore the cable may be called either Forerunner Cable or Coloram II Cable.

DMX512 control cable

The DMX control cable from the lighting board to the power supply is a five conductor cable with 5-pin XLR connectors on each end. The wiring pin out is specified by the USITT DMX512/1990 standard.

XLR Pin #	Function
1	Common
2	Data -
3	Data +
4	Talkback -
5	Talkback +

Parts list

To order any of the following items, contact your authorized WYBRON dealer.

Forerunner color changers and power supplies

4540..... 4-inch Forerunner Color Changer
7140..... 7-inch Forerunner Color Changer
7150..... The Forerunner Power Supply
4549-16..... 4-inch Forerunner gelstring
7149-16..... 7-inch Forerunner gelstring
715-08-01 ..... User Manual

Forerunner mounting and installation accessories

715-01-03P	Power supply hanger bracket
SCRWC252075	Wing screw for power supply hanger bracket to pipe
SCRSC2520037	Socket cap screw for hanger bracket to power supply
452-01-03P	6.25"/158.75mm mounting plate for 4-inch color changer
452-03-04	6.25"/158.75mm mounting plate for 7-inch color changer
703-01-03P	7.5"/190.5mm mounting plate for 7-inch color changer
703-01-05P	10"/254mm mounting plate for 7-inch color changer
SCRPH832037	Pan head screws for mounting plate to color changer

Forerunner System cable

7042-3	3' power/signal cable
7042-5	5' power/signal cable
7042-10	10' power/signal cable
7042-15	15' power/signal cable
7042-25	25' power/signal cable
7042-50	50' power/signal cable
7042-75	75' power/signal cable
7042-100	100' power/signal cable

Warranty information

WYBRON, INC. warrants to the original owner or retail customer that for a period of one year from date of delivery of a portable system or energization of a permanently installed system (up to a maximum of 18 months from delivery) its products will be free from defects in materials and workmanship under normal use and service.

Warranty does not cover any product or part of a product subject to accident, negligence, alteration, abuse, misuse or any accessories or parts not supplied by WYBRON, INC.. Warranty does not cover "consumable" parts such as fuses, lamps, or color media. WYBRON, INC.'s warranty does not extend to items not manufactured by us. Freight terms on warranty repairs are FOB WYBRON, INC. factory or designated repair facility. Collect shipments or freight allowances will not be accepted.

WYBRON, INC.'s sole responsibility under this warranty shall be to repair or replace at WYBRON, INC.'s option such parts as shall be determined to be defected on WYBRON, INC.'s inspection. WYBRON, INC. will not assume any responsibility for any labor expended or materials used to repair any equipment without WYBRON, INC.'s prior written authorization . WYBRON, INC. shall not be responsible for any incidental, general or consequential damages to property, damages for loss of use, time, profits or income, or any other charges.

The owner's obligations during the warranty period under this warranty are to notify WYBRON, INC. at WYBRON, INC.'s address within one week of any suspected defect, and return the goods prepaid to WYBRON, INC. at their factory or authorized service center.

This warranty is contingent on the customer's full and timely compliance with the terms of payment set forth in said purchase order. This warranty is expressly in lieu of any and all other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose and of other obligations and liabilities on our part. The owner acknowledges that no other representations were made to him or relied upon him with respect to the quality and function of the goods sold.

This written warranty is intended as a complete and exclusive statement of the terms thereof. Prior dealings or trade usage shall not be relevant to modify, explain or vary this warranty. Acceptance of, or acquiescing in, a course of performance under this warranty shall not modify the meaning of this agreement even though either party has knowledge of the performance and a chance to object.

WYBRON INCORPORATED

ADVANCING THE ART OF LIGHTING

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Gelstring order form

Standard Forerunner gelstring colors

Frame	Filter Mfgr./Color number	Color name
1	- - - -	Clear
2	G140	Magenta
3	G155	Light Pink
4	G250	Medium Red
5	G290	Fire Orange
6	G325	Bastard Amber
7	G345	Deep Amber
8	G450	Saffron
9	G540	Pale Green
10	G650	Grass Green
11	G685	Pistachio
12	G760	Aqua Blue
13	G810	Moon Blue
14	G850	Blue (Primary)
15	G930	Real Congo Blue
16	G995	Orchid

Custom Forerunner gelstring

Any combination of color filter manufacturer's gels can be combined to create a custom Forerunner gelstring. Please specify using the following format.

Specify: (G) GAM, (L) Lee, (R) Rosco with the color number and the color name.

Frame	Filter Mfgr./Color number	Color name
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____